(1)

DATE 9/26/89

TO: Information Services Branch

FROM: Computer Products Support Group [Init] KT (Init) LL (Init)

RE: DOD/SW/DK-89/027 (REPORT NO.) ANNOUNCE IN GRA & I

PRIORITY ACTION IS REQUIRED

Attached

- [x] Form NTIS 231
- [x] Form 277/FCPC-01
- [x] NTIS 79
- [ ] RDP (OF 272)
- [ ] Consigned Inventory Acquisition Form (Interagency Agreement Number and Split)

Process for:

K File (Data)	[ ]	Documentation
	[ ]	Mag Tape
	[ ]	Diskette
M File (Software)	[ ]	Documentation
	[ ]	Mag Tape
	[x]	Diskette

Action:

- [ ] Defense Sponsored: Acquire ADA Number
- [ ] Order Pending. Return immediately after copying necessary pages.
- [ ] Forward processing pages for documentation to Document Control Section.
  - [ ] Subscription request _____ copies
  - [ ] Shelf Stock request _____ copies
- [ ] Regular Processing. Do not send to Document Control Section.

Remarks:

Highlight / related documentation ADA 19[illegible]

☐ DELETE ☒ NEW ☐ REPLACE ☐ CORRECTION

NTIS COMPUTER PRODUCTS CATALOG DATA SHEET	1. ACCESSION NO.	2. CONTRTIBUTING AGENCY REPORT NO.	3. SUBJECT
	PB90-100272	DOD/SW/DK-89/027	

4. PRODUCT (CIRCLE ONE)

DATA FIILE SOFTWARE MODEL, SIMULATION

5. AGENCY, BUREAU, DIVISION, AND ADDRESS

Defense Advanced Research Projects Agency
DARPA/STD
1400 Wilson Blvd.
Arlington, VA 22209-2308

6. PRODUCT NAME (Use agency nomenclature)

Space Systems Cost Study (for microcomputers)

7. DESCRIPTORS OF PRODUCT (Keywords, identifiers, etc.)

Model, Simulation,

Space Systems,
Cost Study,
Low Cost Satellite,
Cost Reduction

8. DATES OF COVERAGE (For one-time reports, use as-of-date: for software, use date and release no.)

March 1988

9. FILE SIZE IN NO. OF:

REELS [ ] [ ] [ ] DISKETTES [ ] [ ] [2]

10. AVAILABILITY STATEMENT - AGENCY NAME AND ADDRESS, ORDER NO., ETC. (If NTIS sells, leave blank)

11. PRICE INFORMATION

Price code: D99 $55.00 Price includes documentation: AD-A196024

12. GEOGRAPHIC SCOPE

U.S.

13. TECHNICAL REPRESENTATIVES (List at least one for subject and one for media)

NAME	TITLE	PHONE NO.
Craig Mogensen	Chief-Estimating Systems	(303) 971-4548
Doug Dilts	Manager-Estimating Systems	(303) 971-5104

14. DOCUMENTATION

☒ AVAILABLE as: AD-A196024

EXPECTED AVAILABILITY DATE

NTIS COMPUTER PRODUCTS CATALOG DATA SHEET

15. COMPUTER PRODUCT ABSTRACT

The objective of the "Space System Cost Study", Contract MDA972-87C005, was to a methodology and automated database/model that would enable DARPA to evaluate "low cost satellite" programs and appropriate cost reduction approaches. The initial step in this cost study was to derive an estimate for developing and producing a "light" satellite under "business as usual" conditions. These conditions include a "start from scratch" philosophy and all the traditional operating procedures and documentation associated with building a reliable spacecraft.

The significance of the baseline cost modeling effort was to determine a cost estimate that would represent the current culture of the satellite industry. This culture generally follows a "business as usual", "start from scratch" development approach. The baseline program emulates a typical Space Division (U.S. Air Force Space Division) Mil-Std 1450B-type spacecraft. The vehicle mission type used for the analysis is a communications-radio relay spacecraft. The cost estimates and trades to the baseline developed as a result of this study, are applicable to any spacecraft that contains a similar functional mix of structure, payload, and electronics.

The modeling process included evaluating three phases of hardware and software activities: the Development Phase, the Produceability Engineering Phase (PEP), and the Production Phase. The baseline program included cost values for each discrete item (up to 112) for the three phases of effort: Development, PEP, and Production. The 112 discrete items modeled and their costs were contained in the automated database/model, Each item carried through the PEP and Production Phases, if appropriate.

After the baseline program cost values were established (modeled), a list of candidate cost variables was established. These variables represent cost reduction approaches that address virtually all elements comprisinging the total program cost. The cost variables were targeted as items that could be controlled by the contracting agency or contractor. This control could be exerted either by specifications or special instructions to exclude/incude the activity from a normal spacecraft development approach. All of the investigated candidate variables had a potential for program cost savings. Each had three options or degrees of sensitivity. This implied that the activities associated with candidate variables could be implemented completely or as a subset. The automated database/model (DARPASS) contains the cost results for each item/task for each candidate variable (Primary and Secondary) and the three options for each. The total number of results derived as a product of this study exceeds 45,000. See continuation sheet —

16. DATA FILE TECHNICAL DESCRIPTION

The model is contained on 5 1/4 - inch diskette(s), double density (360K), compatible with the IBM PC microcomputer. The diskettes are in the ASCII format.

17. SOFTWARE TECHNICAL DESCRIPTION

Software is written in;

Fortran_____ Cobol_____ Basic_____ Assembly Other PASCAL

CPR Mfr. IBM Model(s) Operating system(s) MS DOS 2.1 or GREATER

Minimum of 256 K bytes core. The following special features and/or additional requirements in hardware:

SIGNATURE OF AGENCY REPRESENTATIVE, PHONE NO., AND DATE DATE FORM	SIGNATURE OF NTIS REPRESENTATIVE AND PREPARED

Computer Product Abstract Continuation

The RCA PRICE H Hardware model was selected as the cost estimating tool for all items except software, which was estimated using Martin Marietta's in-house model, PCEM (software Parametric Cost Estimating Model). Software Description: The model is written in the PASCAL programming language for implementation on an IBM PC or compatible.

COMPUTER DISKETTE FILE PROPERTIES

01. Completion Date						02. Long Title	03. Short Title
Year		Month		Day		DARPA - Space Systems Cost Study Automated Database	DARPA
8	8	0	3	0	1		

04. Copying Date						05. Subscription	06.	07. Number of Diskettes
Year		Month		Day		[ ] Yes	[X] New Product	
						[X] No	[ ] Replacement	2

08. Submitting Organization and Address	09. Technical Contact(s) and Phone
Martin Marietta Astronautics Estimating Systems Dept. MP DC 2800 P.O. Box179 Denver, CO 80201	Doug Dilts 303) 971-5104 Craig Mogensen (303) 971-4548

10. Host Computer/Model	11. Memory Requirement	12. Language/Format
IBM PC or compatible	256K or greater	PASCAL/EXECUTABLE

13. Diskette Size	14. Diskette Capacity		15. Operating System/Version
[ ] 3 1/2	[X] 360K	[ ] 1.2M	DOS 2.1 or Greater
[X] 5 1/4	[ ] 720K	[ ] 1.44M	
[ ] Other _____	[ ] 800K	[ ] Other	

16. Number of Files	17. Number of Records	18. Record Length
Disk 1 - 11 Disk 2 - 15		

19. Documentation

[ ] on Diskette (File # _____)

[X] Paper Copy

20. Supplemental Information

21. For Submitting Organization Use